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DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
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LEONARD K. PETERS
SECRETARY

FACT SHEET

**KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE TREATED WASTEWATER
INTO WATERS OF THE COMMONWEALTH**

KPDES No.: KY0072630
AI No.: 2761

Permit Writer: Sara Beard

Date: June 5, 2009

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

Logan Aluminum Inc.
P.O. Box 3000
Russellville, Kentucky 42276

b. Facility Location

Logan Aluminum Inc.
Highway 431 North
Russellville, Logan County, Kentucky

c. Description of Applicant's Operation

Logan Aluminum casts, rolls, and coats aluminum to produce aluminum body, end, and tab stock for can production (SIC Code 3353).

d. Production Capacity of Facility

3,582,300 lbs/day - Direct Chill Casting
13,541,000 lbs/day - Cold Rolling Process
14,607,000 lbs/day - Hot Rolling Process
11,121,000 ft²/day - Coating Process

e. Description of Existing Pollution Abatement Facilities

Outfall 004 - Combined filter backwash, cooling water, process water, storm water runoff, landfill leachate and storm water runoff (pumped from the collection pond - Outfall 005), sanitary wastewater (internal Outfall 006), and occasional runoff from the drying impoundment area and sludge dewatering.

1. SYNOPSIS OF APPLICATION - continued

e. Description of Existing Pollution Abatement Facilities - continued

Outfall 005 - Storm water runoff and Leachate from the on-site landfill. This outfall is being maintained for emergency and maintenance purposes only. Under normal operating conditions these wastewaters are collected in the pond and pumped to Outfall 004.

Outfall 006 - Sanitary waste is treated in a package plant and aerated surface lagoon prior to discharge to the wetlands system (Outfall 004).

f. Permitting Action

This permitting action involves a reissuance of a major KPDES permit for a new source aluminum mill.

2. RECEIVING WATERS

a. Receiving Water Name

Outfall 004 discharges to Austin Creek at the following coordinates: N 36° 57' 00", W 86° 55' 45".

Outfall 005 discharges to Austin Creek at the following coordinates: N 36° 56' 55", W 86° 55' 43".

Outfall 006 is an internal discharge to Outfall 004.

b. Stream Segment Use Classifications

Austin Creek is classified as a Warmwater Aquatic Habitat, Primary Contact Recreation, Secondary Contact Recreation, and Domestic Water Supply.

c. Stream Segment Antidegradation Categorization

This segment of Austin Creek is listed as impaired on the 2008 303(d) List of Waters For Kentucky. Impairments include partial support of warm water aquatic habitat. The pollutants of concern are unknown. Suspected sources are Industrial Point Source Discharge. A properly operating wastewater treatment plant should not cause or contribute to this impairment.

d. Stream Low Flow Condition

At the point of discharge, the 7Q10 and the Harmonic Mean for Austin Creek are 0.0 and 0.0 cfs, respectively.

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 004 - Combined filter backwash, cooling water, process water, storm water runoff, landfill leachate and storm water runoff (pumped from the collection pond - Outfall 005), sanitary wastewater (internal Outfall 006), and occasional runoff from the drying impoundment area and sludge dewatering.

Effluent Characteristics	Reported Discharge		Proposed Limits		Applicable Water Quality Criteria and/or Effluent Guidelines
	Monthly Average	Daily Maximum	Monthly Average Report	Daily Maximum Report	
Flow (MGD)	0.75	1.25			401 KAR 5:065, Section 2(8)
Total Recoverable Chromium (lbs/day)	0.026	0.027	1.29	3.15	401 KAR 5:065, Sections 4 and 5
Total Cyanide (lbs/day)	0.024	0.025	0.70	1.72	401 KAR 5:065, Sections 4 and 5
Total Recoverable Zinc (lbs/day)	0.090	0.253	3.58	8.70	401 KAR 5:065, Sections 4 and 5
(mg/l)	0.014	0.038	Remove from Permit		401 KAR 5:080, Section 1(2)(c)2
Total Recoverable Aluminum (lbs/day)	1.71	3.55	21.39	48.69	401 KAR 5:065, Sections 4 and 5
Oil & Grease (lbs/day)	15.1	29.1	84.98	84.98	401 KAR 5:065, Sections 4 and 5
Total Suspended Solids (lbs/day)	16.1	17.9	381.0	842.6	401 KAR 5:065, Sections 4 and 5 401 KAR 5:080, Section 1(2)(c)2 401 KAR 10:031, Section 4 401 KAR 5:045, Sections 2 and 3
Hardness (as mg/l CaCO ₃)	133	173	Report	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Metals (mg/l)	0.68	0.68	Report	Report	401 KAR 5:065, Section 2(8)
Ammonia (as N (mg/l)	2.62	3.82	Report	Report	401 KAR 5:065, Section 2(8)
Phosphorous (as P) (mg/l)	0.11	0.18	Report	Report	401 KAR 5:065, Section 2(8)
Chronic Toxicity (TU _c)	N/R	2.08	N/A	1.0	401 KAR 10:029, Section 5 401 KAR 10:031, Sections 1 and 4
pH (standard units)	6.5(min)	9.5(max)	6.0(min)	9.0(max)	401 KAR 10:031, Section 4

The data contained under the reported discharge columns is from the analysis of the Discharge Monitoring Reports (DMRs) data that has been reported during the term of the current permit.

The term Total Recoverable Metals means those metals listed on Form C, Section V, Part C - Metals, Cyanide, and Total Phenols: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc.

4. **METHODOLOGY USED IN DETERMINING LIMITATIONS**

a. Serial Number

Outfall 004 - Combined filter backwash, cooling water, process water, storm water runoff, landfill leachate and storm water runoff (pumped from the collection pond - internal Outfall 005), sanitary wastewater (internal Outfall 006), and occasional runoff from the drying impoundment area and sludge dewatering.

b. Effluent Characteristics

pH	Oil & Grease	Total Recoverable Zinc
Flow	Total Cyanide	Total Recoverable Metals
Ammonia	Chronic Toxicity	Total Recoverable Chromium
Hardness	Total Suspended Solids	Total Recoverable Aluminum
Phosphorous		

c. Pertinent Factors

The coating line wastewaters are subject to the "New Source Performance Standards" (NSPS) requirements of Subpart C - Aluminum Basis Material Subcategory of the Coil Coating Point Source Category Effluent Guidelines (40 CFR 465.33)

The cold rolling wastewaters are subject to the "New Source Performance Standards" (NSPS) requirements of the Core Without an Annealing Furnace Section of Subpart A - Rolling with Neat Oils Subcategory of the Aluminum Forming Point Source Category (40 CFR 467.14)

The casting wastewaters are subject to the "New Source Performance Standards" (NSPS) requirements of the Direct Chill Casting Contact Cooling Water Section of Subpart B - Rolling with Emulsions Subcategory of the Aluminum Forming Point Source Category (40 CFR 467.24)

The hot rolling wastewaters are subject to the "New Source Performance Standards" (NSPS) requirements of the Core Section of Subpart B - Rolling with Emulsions Subcategory of the Aluminum Forming Point Source Category (40 CFR 467.24)

A summarization of the effluent guidelines, water quality standards, assumptions, and calculations can be found in Attachment A - Regulatory Requirements and Attachment B - Steady State Toxics Wasteload Allocation Model (SSTWAM2004) - Reasonable Potential Analysis.

d. Monitoring Requirements

Flow shall be monitored continuously by recorder.

pH shall be monitored once per day by grab sample.

Ammonia, Total Recoverable Zinc, Total Recoverable Aluminum, Oil & Grease, Hardness, Phosphorous, and Total Suspended Solids shall be monitored twice per week by grab sample.

Total Recoverable Metals shall be monitored once per quarter by grab sample. The results of the analyses shall be total and reported as a single concentration on the DMR. The laboratory bench sheets showing the results for each metal shall be attached to the DMR.

Chronic Toxicity shall be monitored once per quarter by a minimum of three (3) grab samples collected over one (1) week.

Total Recoverable Chromium and Total Cyanide shall be monitored once per quarter by grab sample.

4. **METHODOLOGY USED IN DETERMINING LIMITATIONS - continued**

e. Justification of Limits

The Kentucky Administrative Regulations (KARs) cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes (KRSs).

Flow, Hardness, Ammonia, Phosphorous, and Total Recoverable Metals

The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8).

Total Recoverable Chromium, Total Cyanide, Total Recoverable Aluminum, Total Recoverable Zinc, and Oil & Grease

The limits for these parameters are consistent with the requirements of 401 KAR 5:065, Sections 4 and 5. These limits are representative of the "New Source Performance Standards" (NSPS) requirements for aluminum coils coating (40 CFR 465.33), cold rolling of aluminum with neat oils (40 CFR 467.14), hot rolling of aluminum with emulsions (40 CFR 467.24 - Core), and aluminum casting (40 CFR 467.24 - Direct Chill Casting Contact Cooling Water).

Total Suspended Solids

The limits for this parameter are consistent with the requirements of 401 KAR 5:065, Sections 4 and 5, 401 KAR 10:031, Section 4, and 401 KAR 5:045, Sections 2 and 3. These limits are representative of the "New Source Performance Standards" (NSPS) requirements for aluminum coils coating (40 CFR 465.33), cold rolling of aluminum with neat oils (40 CFR 467.14), hot rolling of aluminum with emulsions (40 CFR 467.24 - Core), and aluminum casting (40 CFR 467.24 - Direct Chill Casting Contact Cooling Water). Section 4 of 10:031 establishes water quality criteria for the protection of Kentucky's waters. Sections 2 and 3 of 5:045 require biochemically degradable wastewaters to receive secondary treatment.

pH

The limits for this parameter are consistent with the requirements of 401 KAR 10:031, Section 4 (Kentucky Water Quality Standards).

Chronic Toxicity

The requirements for this parameter are consistent with the requirements of 401 KAR 10:029, Section 5 and 401 KAR 10:031, Sections 1 and 4.

5. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 005 - Storm water runoff and Leachate from the on-site landfill. This outfall is being maintained for emergency and maintenance purposes only. Under normal operating conditions these wastewaters are collected in the pond and pumped to Outfall 004.

Effluent Characteristics	Reported Discharge		Proposed Limits		Applicable Water Quality Criteria and/or Effluent Guidelines
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	
Flow (MGD)	0.18	0.22	Report	Report	401 KAR 5:065, Section 2(8)
Precipitation (inches)	0.15	1.51	Report	Report	401 KAR 5:065, Section 2(8)
Oil & Grease (mg/l)	2.85	3.21	10	15	401 KAR 5:080, Section 1(2)(c)2
Total Suspended Solids (mg/l)	16.3	18.9	30	50	401 KAR 5:080, Section 1(2)(c)2
Hardness (as mg/l CaCO ₃)	188.6	203.3	Report	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Metals (mg/l)	0.90	0.91	Report	Report	401 KAR 5:065, Section 2(8)
Priority Pollutants (mg/l)	0.101	0.101	Removing from Permit		401 KAR 5:080, Section 1(2)(c)2
pH (standard units)	6.9(min)	9.0(max)	6.0(min)	9.0(max)	401 KAR 10:031, Section 4

The data contained under the reported discharge columns is from the analysis of the Discharge Monitoring Reports (DMRs) data that has been reported during the term of the current permit.

The term Total Recoverable Metals means those metals listed on Form C, Section V, Part C - Metals, Cyanide, and Total Phenols: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc.

6 **METHODOLOGY USED IN DETERMINING LIMITATIONS**

a. Serial Number

Outfall 005 - Storm water runoff and Leachate from the on-site landfill.

b. Effluent Characteristics

Flow	Precipitation
Oil & Grease	Total Suspended Solids
Hardness	Total Recoverable Metals
Priority Pollutants	pH

c. Pertinent Factors

Under normal operating conditions, the storm water runoff and leachate from the on-site landfill are collected in the pond and pumped to the Wetlands for discharge through Outfall 004. This outfall is being maintained for emergency and maintenance purposes only (i.e. limits do not apply unless effluent from 005 is being discharged to Austin Creek directly).

The landfill is a demolition and debris landfill that receives various waste materials.

d. Monitoring Requirements

Flow shall be monitored instantaneously once per discharge.

Precipitation, Total Suspended Solids, pH, Hardness, and Oil & Grease shall be monitored once per discharge by grab sample.

Total Recoverable Metals shall be monitored once per discharge, but no more frequently than once per quarter, by grab sample. The results of the analyses shall be total and reported as a single concentration on the DMR. The laboratory bench sheets showing the results for each metal shall be attached to the DMR.

e. Justification of Limits

The Kentucky Administrative Regulations (KARs) cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes (KRSs).

Internal Monitoring Requirement

Section 3(8) of 401 KAR 5:065 authorizes the establishment of internal monitoring points to ensure compliance with applicable treatment requirements, which when commingling with other wastestreams will prevent measuring compliance.

Flow, Precipitation, Hardness, Total Recoverable Metals, and Priority Pollutants

The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8).

Total Suspended Solids and Oil & Grease

The limits for these parameters are consistent with the requirements of 401 KAR 5:080, Section 1(2)(c)2. These limits are representative of the Division of Water's "Best Professional Judgement" (BPJ) determination of the "Best Conventional Pollutant Control Technology" (BCT) requirements for these pollutants.

pH

The limits for this parameter are consistent with the requirements of 401 KAR 10:031, Section 4.

6 METHODOLOGY USED IN DETERMINING LIMITATIONS - continued

e. Justification of Limits - continued

Priority Pollutants

The removal of this parameter from the permit is consistent with the 401 KAR 5:080, Section 1(2)(c)2. A review of the DMR data for the previous permit indicated that reasonable potential did not exist for this parameter to be limited or monitored in the permit. Therefore, it is the "Best Professional Judgement" (BPJ) of the Division of Water that this parameter be removed from the permit.

7. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 006 - Sanitary waste is treated in a package plant and aerated surface lagoon prior to discharge to the wetlands system (Outfall 004).

Effluent Characteristics	Reported Discharge		Proposed Limits		Applicable Water Quality Criteria and/or Effluent Guidelines
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	
Flow (MGD) (design capacity = 60,000 gpd)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
BOD ₅ (mg/l)	N/R	N/R	30	45	401 KAR 10:031, Section 4 401 KAR 5:045, Sections 3 and 5
Total Suspended Solids (mg/l)	N/R	N/R	30	45	401 KAR 10:031, Section 4 401 KAR 5:045, Sections 2 and 3
<i>Escherichia Coli</i> (N/100 ml)	N/R	N/R	130	240	401 KAR 10:031, Section 7 401 KAR 5:045, Section 4 401 KAR 5:080, Section 1(2)(c)2
Ammonia Nitrogen (as mg/l N)	N/R	N/R	20	30	401 KAR 10:031, Section 4
Dissolved Oxygen (mg/l) (minimum)	N/R	N/A	Not less than 2.0		401 KAR 10:031, Section 4 401 KAR 5:045, Sections 3 and 5
pH (standard units)	N/R	N/R	6.0 (min)	9.0 (max)	401 KAR 10:031, Section 4 401 KAR 5:045, Section 4
Total Residual Chlorine (mg/l)	N/R	N/R	0.011	0.019	401 KAR 10:031, Section 4

The data contained under the reported discharge columns is not from the renewal application, but rather from the analysis of the DMR data that has been reported during the term of the previous permit.

The abbreviation BOD₅ means Biochemical Oxygen Demand (5-day).

The abbreviations N/R and N/A mean not reported on the Discharge Monitoring Report (DMR) and not applicable, respectively.

The effluent limitations for BOD₅ and Total Suspended Solids are Monthly Averages and Weekly Averages.

The effluent limitations for *Escherichia Coli* are 30 day and 7 day Geometric Means.

The data contained under the reported discharge columns is from the analysis of the Discharge Monitoring Reports (DMRs) data that has been reported during the term of the current permit.

8 METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Number

Outfall 006 - Sanitary waste is treated in a package plant and aerated surface lagoon prior to discharge to the wetlands system (Outfall 004).

b. Effluent Characteristics

Flow	Biochemical Oxygen Demand (5-day)
Total Suspended Solids	<i>Escherichia Coli</i>
Dissolved Oxygen	pH
Ammonia Nitrogen	Total Residual Chlorine (TRC)

c. Pertinent Factors

On September 8, 2004 Kentucky's revised water quality standards, 401 KAR 10:031 became effective.

The package plant formerly discharged to the spray fields. This wastestream will now be rerouted to the wetlands system before ultimately discharging through Outfall 004.

d. Monitoring Requirements

Flow shall be monitored instantaneously once per month.

Ammonia Nitrogen, Biochemical Oxygen Demand (5-day), Total Suspended Solids, *Escherichia Coli*, pH, Dissolved Oxygen and Total Residual Chlorine shall be monitored once per month by grab sample.

e. Justification of Conditions

The Kentucky regulations cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

Internal Monitoring Requirement

Section 3(8) of 401 KAR 5:065 authorizes the establishment of internal monitoring points to ensure compliance with applicable treatment requirements, which when commingling with other wastestreams will prevent measuring compliance.

Escherichia Coli and Fecal Coliform Bacteria

The limits for *Escherichia Coli* are consistent with the requirements of 401 KAR 10:031, Section 7, 401 KAR 5:045 Section 4 and 401 KAR 5:080, Section 1(2)(c) 2. Although Fecal Coliform Bacteria has been used as an indicator of fecal contamination, it does contain other species that are not necessarily fecal in origin. EPA recommends *Escherichia Coli*, which is specific to fecal material from warm-blooded animals, as the best indicator of health risk from contact with recreational waters. Therefore, it is the "Best Professional Judgment" "BPJ" of the Division of Water that *Escherichia Coli* be used in place of Fecal Coliform Bacteria on this permit.

Flow

The monitoring requirements for this parameter are consistent with the requirements of 401 KAR 5:065, Section 2(8).

8. METHODOLOGY USED IN DETERMINING LIMITATIONS - continued**e. Justification of Conditions - continued**BOD₅, Ammonia Nitrogen, and Dissolved Oxygen

The limits for these parameters are consistent with the requirements of 401 KAR 10:031, Section 4, and 401 KAR 5:045, Sections 3 and 5. Section 4 of 10:031 establishes water quality criteria for the protection of Kentucky's waters.

Total Residual Chlorine

The limits for this parameter are consistent with the requirements of 401 KAR 10:031, Section 4. Section 4 of 10:031 establishes water quality criteria for the protection of Kentucky's waters.

Total Suspended Solids

The limits for this parameter are consistent with the requirements of 401 KAR 10:031, Section 4 and 5:045, Sections 2 and 3. Section 4 of 10:031 establishes water quality criteria for the protection of Kentucky's waters. Sections 2 and 3 of 5:045 require biochemically degradable wastewaters to receive secondary treatment.

pH

The limits for these parameters are consistent with the requirements of 401 KAR 10:031, Section 4 and 5:045, Section 4. Section 4 of 10:031 establishes water quality criteria for the protection of Kentucky's waters. Section 4 of 5:045 establishes the acceptable levels of these parameters for biochemically degradable wastewaters.

9. ANTIDEGRADATION

The development of this permit commenced prior to the April 12, 2005 EPA approval of Kentucky's Antidegradation Regulation promulgated on September 8, 2004. Therefore, previous antidegradation requirements are applicable. The conditions of 401 KAR 10:029, Section 1 have been satisfied by this permit action. A review under 401 KAR 10:030 Section 1 is not applicable.

10. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS

Permittee shall comply with the effluent limitations by the effective date of the permit.

11. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGECooling Water Additives, FIFRA, and Mollusk Control

The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in cooling water which ultimately may be released to the waters of the Commonwealth is prohibited, except Herbicides, unless specifically identified and authorized by the KPDES permit. In the event the permittee needs to use a biocide or chemical not previously reported for mollusk control or other purpose, the permittee shall submit sufficient information, a minimum of thirty (30) days prior to the commencement of use of said biocides or chemicals, to the Division of Water for review and establishment of appropriate control parameters. Such information requirements shall include:

1. Name and general composition of biocide or chemical,
2. Any and all aquatic organism toxicity data,
3. Quantities to be used,
4. Frequencies of use,
5. Proposed discharge concentrations, and
6. EPA registration number, if applicable.

11. **PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE - continued**

Best Management Practices (BMP) Plan

Pursuant to 401 KAR 5:065, Section 2(10), a BMP requirement shall be included: to control or abate the discharge of pollutants from ancillary areas containing toxic or hazardous substances or those substances which could result in an environmental emergency; where numeric effluent limitations are infeasible; or to carry out the purposes and intent of KRS 224. The facility has several areas where support activities occur which have a potential of the discharge of such substances through storm water runoff or spillage. Some of these areas will drain to present wastewater treatment plants, others will not.

Outfall Signage

It is the Best Professional Judgment of the Division of Water, 401 KAR 5:080, Section 1(2)(c)2, that all permittees post a marker at all discharge locations and/or monitoring points. The marker shall be at least 2 feet by 2 feet in size and a minimum of 3 feet above ground level with the Permittee Name and KPDES permit and outfall numbers in 2 inch letters. For internal monitoring points the marker shall be of sufficient size to include the outfall number in 2 inch letters and is to be posted as near as possible to the actual sampling location.

12. **PERMIT DURATION**

Five (5) years. This facility is in the Tradewater/Green Basin Management Unit as per the Kentucky Watershed Management Framework.

13. **PERMIT INFORMATION**

The application, draft permit fact sheet, public notice, comments received, and additional information is available by writing the Division of Water at 200 Fair Oaks Lane, Frankfort, Kentucky 40601.

14. **REFERENCES AND CITED DOCUMENTS**

All material and documents referenced or cited in this fact sheet are, a part of the permit information as described above and are readily available at the Division of Water Central Office. Information regarding these materials may be obtained from the person listed below.

15. **CONTACT**

For further information contact the individual identified on the Public Notice or the Permit Writer - Sara Beard at (502) 564-3410, extension 4925 or e-mail Sara.Beard@ky.gov.

16. **PUBLIC NOTICE INFORMATION**

Please refer to the attached Public Notice for details regarding the procedures for a final permit decision, deadline for comments, and other information required by 401 KAR 5:075, Section 4(2)(e).

ATTACHMENT A - REGULATORY REQUIREMENTS

EFFLUENT GUIDELINES

The facility is a "New Source" subject to the requirements of Subpart C of 40 CFR Part 465 - Coil Coating Point Source Category and Subparts A and B of 40 CFR Part 467 - Aluminum Forming Point Source Category. Specifically, the "New Source Performance Standards" (NSPS) for the: Aluminum Basis Material Subcategory (40 CFR 465.33), Rolling With Neat Oils Subcategory (40 CFR 467.14), and Rolling With Emulsions Subcategory (40 CFR 467.24).

PART 465 - COIL COATING POINT SOURCE CATEGORY

Subpart C - Aluminum Basis Material Subcategory

Subsection 465.30 - Applicability; description of the aluminum basis material subcategory

This subpart applies to discharges to waters of the United States and introductions of pollutants into publicly owned treatment works from coil coating of aluminum basis material coils.

Subsection 465.33 - New Source Performance Standards

The following standards of performance establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a new source subject to the provisions of this subpart.

Subpart C

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	lb/million ft ² of area processed	
Chromium	0.037	0.015
Cyanide	0.020	0.008
Zinc	0.10	0.041
Aluminum	0.30	0.121
Oil & Grease	0.98	0.98
Suspended Solids	1.46	1.17
pH	Within the range of 7.5 to 10.0 at all times	

PART 467 - ALUMINUM FORMING POINT SOURCE CATEGORY

Subpart A - Rolling With Neat Oils Subcategory

Subsection 467.10 - Applicability; description of the rolling with neat oils subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introductions of pollutants into publicly owned treatment works from the core and the ancillary operations of the rolling with neat oils subcategory.

EFFLUENT GUIDELINES - continued

Subsection 467.11 - Specialized definitions.

For the purpose of this subpart:

(a) The "core" of the rolling with neat oils subcategory shall include rolling using neat oils, roll grinding, sawing, annealing, stationary casting, homogenizing artificial aging, degreasing, and stamping.

(b) The term "ancillary operation" shall mean any operation not previously included in the core, performed on-site, following or preceding the rolling operation. The ancillary operations shall include continuous rod casting, continuous sheet casting, solution heat treatment, cleaning or etching.

Subsection 467.14 - New Source Performance Standards

Any new source subject to this subpart must achieve the following performance standards. The mass of pollutants in the core and ancillary operations' process wastewater shall not exceed the following values:

**Subpart A
Core Without an Annealing Furnace Scrubber**

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	lb/million lbs of aluminum rolled with neat oils	
Chromium	0.021	0.0083
Cyanide	0.011	0.0044
Zinc	0.057	0.023
Aluminum	0.338	0.150
Oil & Grease	0.553	0.553
Suspended Solids	0.830	0.664
pH	Within the range of 7.0 to 10.0 at all times	

Subpart B - Rolling With Emulsions Subcategory

Subsection 467.20 - Applicability; description of the rolling with emulsions subcategory.

This subpart applies to dischargers of pollutants to waters of the United States and introductions of pollutants into publicly owned treatment works from the core and the ancillary operations of the rolling with emulsions subcategory.

Subsection 467.21 - Specialized definitions.

For the purpose of this subpart:

(a) The "core" of the rolling with emulsions subcategory shall include rolling using emulsions, roll grinding, stationary casting, homogenizing, artificial aging, annealing, and sawing.

(b) The term "ancillary operation" shall mean any operation not previously included in the core, performed on-site, following or preceding the rolling operation. The ancillary operations shall include direct chill casting, solution heat treatment, cleaning or etching, and degassing.

EFFLUENT GUIDELINES - continued

Subsection 467.24 - New Source Performance Standards

Any new source subject to this subpart must achieve the following performance standards. The discharge of process wastewater pollutants from the core shall not exceed the values set forth below:

**Subpart B
Core**

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	lb/million lbs of aluminum rolled with emulsions	
Chromium	0.048	0.020
Cyanide	0.026	0.011
Zinc	0.133	0.055
Aluminum	0.80	0.35
Oil & Grease	1.30	1.30
Suspended Solids	1.95	1.56
pH	Within the range of 7.0 to 10.0 at all times	

**Subpart B
Direct Chill Casting Contact Cooling Water**

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	lb/million lbs of aluminum cast by semicontinuous methods	
Chromium	0.49	0.20
Cyanide	0.27	0.11
Zinc	1.36	0.56
Aluminum	8.12	3.60
Oil & Grease	13.29	13.29
Suspended Solids	19.94	15.95
pH	Within the range of 7.0 to 10.0 at all times ¹	

¹The pH shall be maintained within the range of 7.0 to 10.0 at all times except for those situations when this waste stream is discharged separately and without commingling with any other wastewater in which case the pH shall be within the range of 6.0 to 10.0 at all times.

401 KAR 10:031 - Warm Water Aquatic Habitat

Pollutant or pollutant property				
	Acute Criteria	Chronic Criteria	Human Health Fish Consumption	Human Health Domestic Water Supply
Total Recoverable Chromium	None	None	None	0.10 mg/l
Total Cyanide	None	None	None	None
Total Recoverable Zinc	$e^{(0.8473 * (\ln \text{Hardness}) + 0.884)}$	$e^{(0.8473 * (\ln \text{Hardness}) + 0.884)}$	26 mg/l	7.4 mg/l
Total Recoverable Aluminum	None	None	None	None

401 KAR 5:045, Section 3 - Secondary Treatment

Pollutant or Pollutant Characteristic	Maximum Concentration (mg/l)	Average Concentration (mg/l)
Total Suspended Solids	45	30

401 KAR 5:080, SECTION 1(2)(c)2 - BEST PROFESSIONAL JUDGEMENT - for concentrations in Storm Water Runoff

Pollutant or Pollutant Characteristic	Maximum Concentration (mg/l)	Average Concentration (mg/l)
Total Suspended Solids	50	30

Limits Calculation

EFFLUENT GUIDELINES

The final effluent limitations required by the effluent guidelines are a summation of the component contributions.

The following formulas were used to calculate the contribution from each source:

$$\text{Monthly Average} = \sum [(\text{Production Rate}) \times (\text{Monthly Average Factor})]$$

$$\text{Daily Maximum} = \sum [(\text{Production Rate}) \times (\text{Daily Maximum Factor})]$$

The following tables are a summarization of these calculations.

Pollutant or pollutant property	40 CFR 465.33 - NSPS - Coating Line (11.121×10^6 ft ² /day)	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	0.411	0.167
Cyanide	0.222	0.089
Zinc	1.112	0.456
Aluminum	3.336	1.346
Oil & Grease	10.899	10.899
Suspended Solids	16.237	13.012

Pollutant or pollutant property	40 CFR 467.14 - NSPS - Cold Rolling Process (13.541×10^6 lbs/day)	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	0.284	0.112
Cyanide	0.149	0.060
Zinc	0.772	0.311
Aluminum	4.577	2.031
Oil & Grease	7.488	7.488
Suspended Solids	11.239	8.991

LIMITS CALCULATIONS - EFFLUENT GUIDELINES - continued

Pollutant or pollutant property	40 CFR 467.24 - NSPS - Hot Rolling Process (14.607*10 ⁶ lbs/day)	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	0.701	0.292
Cyanide	0.380	0.161
Zinc	1.943	0.803
Aluminum	11.686	5.112
Oil & Grease	18.989	18.989
Suspended Solids	28.484	22.787

Pollutant or pollutant property	40 CFR 467.24 - NSPS - Direct Chill Casting (3.5823*10 ⁶ lbs/day)	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	1.755	0.716
Cyanide	0.967	0.394
Zinc	4.872	2.006
Aluminum	29.088	12.896
Oil & Grease	47.609	47.609
Suspended Solids	71.431	57.138

Pollutant or pollutant property	Total Effluent Guideline Limitations	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	3.152	1.288
Cyanide	1.718	0.703
Zinc	8.699	3.577
Aluminum	48.687	21.386
Oil & Grease	84.985	84.985
Suspended Solids	127.390	101.927

Where:

- Q30 is the 30-day or average flow of each component wastestream
- Q1 is the maximum flow of each component wastestream
- F30 is the average factor applied to each component wastestream
- F1 is the maximum factor applied to each component wastestream

LIMITS CALCULATION - BEST PROFESSIONAL JUGEMENT - continued

Storm Water Runoff Flow Calculations								
Source	Coefficient of Runoff	Surface Area (acres)	10-yr 24-hr Rainfall (inches)	Average Annual Rainfall (inches)	Maximum Conversion Factor	Average Conversion Factor	Max. Flow (gpm)	Ave. Flow (gpm)
Landfill Runoff								
Distrubed Area	0.80	9.60	4.80	46.38	18.71	1.23	689.73	438.17
Gravel Area	0.80	0.90	4.80	46.38	18.71	1.23	64.66	41.08
Grassy Area	0.25	10.00	4.80	46.38	18.71	1.23	224.52	142.63
Basin	0.00	0.72	4.80	46.38	18.71	1.23	0.00	0.00
Wetlands								
Berms, Islands, Buffers	0.05	38.75	4.80	46.38	18.71	1.23	174.00	110.54
Ponds	0.00	1.00	4.80	46.38	18.71	1.23	0.00	0.00
Process Ponds	0.00	1.00	4.80	46.38	18.71	1.23	0.00	0.00

Source	Flow (gpm)		Total Suspended Solids			
			Factor		Contribution	
	Maximum	Average	Maximum	Average	Maximum	Average
Landfill Runoff						
Distrubed Area	690	438	50	30	34486	13145
Gravel Area	65	41	50	30	3233	1232
Grassy Area	225	143	50	30	11226	4279
Basin	0	0	50	30	0	0
Wetlands					0	0
Berms, Islands, Buffers	174	111	50	30	8700	3316
Ponds	0	0	50	30	0	0
Process Ponds	0	0	50	30	0	0
Totals	1153	732			57646	21973
Weighted Total Contribution (mg/l)					50	30
Weighted Total Contribution (lbs/day)					692.71	264.04

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Permit Writer	Sara Beard	
Date Entered	2/23/2007	
Facility Name	Logan Aluminum	
KPDES Number	KY0072630	
Outfall Number	004	
Case	1	
Status:		
Is this an existing facility – Enter “E”		
Is this an existing facility with an increase in pollutant load – Enter “I”		
Is this a new facility – Enter “N”		
Is this a regional facility with an approved up-to-date 201 plan – Enter “R”		
Has the permittee made a successful alternatives analysis/socioeconomic demonstration – Enter “A”	I	
Receiving Water Name	Austin Creek	
Discharge Mile Point	3.6	
Public Water Supply Name	Central City Water & Sewer System	
Intake Water Name	Green River	
Intake Mile Point	85.4	
Total Effluent Flow (Q_T)	1.31	MGD
Receiving Water 7Q10 (Q_{RW7Q10})	0.00	MGD
Receiving Water Harmonic Mean (Q_{RWHM})	0.20	MGD
Receiving Water pH	7.50	SU
Receiving Water Temperature	20.00	°C
Intake Water 7Q10 (Q_{IW7Q10})	505.00	MGD
Intake Water Harmonic Mean (Q_{IWHM})	3150.00	MGD
Effluent Hardness	176.6	(as mg/l CaCO ₃)
Receiving Water Hardness	100	(as mg/l CaCO ₃)
Zone of Initial Dilution (ZID)	1.00	
Mixing Zone (MZ)	0.333	
Acute to Chronic Ratio (ACR)	0.1	
Impaired	Yes	
Permittee agrees to accept no mixing zone for bioaccumulative or persistent pollutants prior to 09/08/2014	Yes	

STEADY STATE TOXICS WASTELoad ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Calculation Methodology

Definitions

Acute to Chronic Ratio
 Aquatic Life Acute Criteria
 Aquatic Life Chronic Criteria
 Human Health Criteria - Fish Only
 Human Health Criteria - Fish & Water
 End of Pipe Effluent Limit
 Instream Background Concentration
 Toxicity Units - Acute
 Effluent Hardness

ACR
 C_A
 C_C
 C_{HHFO}
 C_{HHFW}
 C_T
 C_U
 TU_a
 H_T

Total Effluent Flow
 Receiving Water 7Q10
 Receiving Water Harmonic Mean
 Intake Water 7Q10
 Intake Water Harmonic Mean
 Zone of Initial Dilution
 Mixing Zone
 Toxicity Units - Chronic
 Receiving Water Hardness

Q_T
 Q_{RW7Q10}
 Q_{RWHM}
 Q_{IW7Q10}
 Q_{IWHM}
 ZID
 MZ
 TU_c
 H_{RW}

Aquatic Life - Chemical Specific

Acute

NO ZID given $C_T = C_A$
 ZID given $C_T = (C_A - C_U) \times (ZID)$

Chronic Mixing Zone / Complete Mix

$$C_T = \{C_C[Q_T + (MZ)(Q_{RW7Q10})] - [C_U(MZ)(Q_{RW7Q10})]\} / Q_T$$

Human Health - Chemical Specific

Fish Only: Mixing Zone / Complete Mix

Carcinogen / Non-Carcinogen $C_T = \{C_{HHFO}[Q_T + (MZ)(Q_{RWHM})] - C_U(MZ)(Q_{RWHM})\} / Q_T$

Fish & Water Only: Mixing Zone / Applicable at point of withdrawal

Carcinogen $C_T = \{C_{HHFW}[Q_T + (Q_{IWHM})] - C_U(Q_{IWHM})\} / Q_T$
 Non-Carcinogen $C_T = \{C_{HHFW}[Q_T + (Q_{IW7Q10})] - C_U(Q_{IW7Q10})\} / Q_T$

Aquatic Life - Whole Effluent Toxicity

Acute (Units TU_a)

NO ZID given $C_T = C_A$
 ZID given $C_T = (C_A - C_U) \times (ZID)$

Chronic Mixing Zone / Complete Mix (Units TU_c)

$C_T = \{C_C[Q_T + (MZ)(Q_{RW7Q10})] - [C_U(MZ)(Q_{RW7Q10})]\} / Q_T$
 Conversion of TU_c to TU_a : $TU_c \times ACR = TU_a$

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Metal Aquatic Criteria

Pollutant

Total Recoverable Cadmium
 Chromium III
 Total Recoverable Copper
 Total Recoverable Lead
 Total Recoverable Nickel
 Total Recoverable Silver
 Total Recoverable Zinc

Acute Criteria

$e^{(1.0166 (\ln \text{Hardness}) - 3.924)}$
 $e^{(0.8190 (\ln \text{Hardness}) + 3.7256)}$
 $e^{(0.9422 (\ln \text{Hardness}) - 1.700)}$
 $e^{(1.273 (\ln \text{Hardness}) - 1.460)}$
 $e^{(0.8460 (\ln \text{Hardness}) + 2.255)}$
 $e^{(1.72 (\ln \text{Hardness}) - 6.59)}$
 $e^{(0.8473 (\ln \text{Hardness}) + 0.884)}$

Chronic Criteria

$e^{(0.7409 (\ln \text{Hardness}) - 4.719)}$
 $e^{(0.8190 (\ln \text{Hardness}) + 0.6848)}$
 $e^{(0.8545 (\ln \text{Hardness}) - 1.702)}$
 $e^{(1.273 (\ln \text{Hardness}) - 4.705)}$
 $e^{(0.8460 (\ln \text{Hardness}) + 0.0584)}$
 $e^{(0.8473 (\ln \text{Hardness}) + 0.884)}$

Hardness (as mg/l CaCO₃)

Zone Initial Dilution (ZID)
 Mixing Zone

$$H_{RW} + [H_T + H_{RW}]/ZID$$

$$[(Q_{RW7Q10})(MZ)(H_{RW}) + (Q_T)(H_T)]/[(Q_{RW7Q10})(MZ) + (Q_T)]$$

Total Ammonia Criteria

Chronic - applies state wide - unionized criteria of 0.05 mg/l

Acute - applies to the Ohio River (ORSANCO Criteria)

$$[0.05 * (1 + 10^{(pKa - pH)})] / 1.2$$

$$[0.411 / (1 + 10^{(7.204 - pH)})] + [58.4 / (1 + 10^{(pH - 7.204)})]$$

$$pKa = (0.0902 + (2730 / (273.1 + T)))$$

T = Temperature °C

Bioaccumulative or Persistent

For new facilities after September 8, 2004 mixing zones shall not be granted for bioaccumulative or persistent pollutants of concern.

Mixing zones for bioaccumulative or persistent pollutants of concern assigned prior to September 8, 2004 shall expire no later than September 8, 2014, unless the permittee agrees to expiration of the mixing zone prior to that date.

Therefore, the application of the more stringent criteria of Human Health Fish & Water Consumption, Human Health Fish Only Consumption, and Aquatic Life Chronic shall apply as end-of-pipe effluent limitations.

Antidegradation

If a new facility or an existing facility that will have a pollutant load increase, the effluent limits are halved unless the receiving stream is impaired or the permittee has demonstrated a negative socioeconomic or cost benefit analysis.

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Reasonable Potential Analysis

In establishing water quality based effluent conditions the Division of Water must determine if the pollutant concentrations in the discharge will cause, have the reasonable potential to cause, or contribute to an excursion of any water standard. The process by which the Division of Water makes this determination is known as a Reasonable Potential Analysis.

A Reasonable Potential Analysis is performed by first calculating the expected effluent limitations for those pollutants with water quality criteria. The calculated limits are then compared to the concentrations reported on the KPDES permit application and/or a summarization of the values reported on the Discharge Monitoring Report (DMRs) submitted during the term of the permit. This comparison is made by dividing the reported value by the calculated effluent limitation and converting to a percentage. The following criteria are used in determining how the pollutant will be addressed in the permit.

New Permits or New Pollutants on Permit Renewals

If the reported concentration is less than 70% of the calculated effluent limit then no monitoring or limitations will be required.

If the reported concentration is equal to or greater than 70% but less than 90% of the calculated effluent limit then monitoring will be required.

If the reported concentration is equal to or greater than 90% and the number of analysis reported on the KPDES permit application is less than 12 then monitoring will be required.

If the reported concentration is equal to or greater than 90% and the number of analysis reported on the KPDES permit application is equal or greater than 12 then an effluent limitation will be required.

Permit Renewals - Existing Pollutants

If the reported concentration is less than 70% of the calculated effluent limit then and the source of the reported concentration was the DMRs for that facility and there were more than 12 DMRs utilized to determine the reported concentrations then the pollutant will be removed from the permit.

If the reported concentration is equal to or greater than 70% but less than 90% of the calculated effluent limit then monitoring will be required.

If the reported concentration is equal to or greater than 90% then an effluent limitation will be required.

In all cases, the Division of Water still may exercise its Best Professional Judgment in the implementation of the results.

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
Chloride	16887006	0.000000	34.000000	600.000000	1,200.000000	0.00%	2.83%	Application	1	None	None	Chronic	Acute
Total Residual Chlorine		0.000000	0.040000	0.011000	0.019000	0.00%	210.53%	Application	1	None	Monitoring	Chronic	Acute
Color		0.000000	0.000000	28.987214	0.000000	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Fluoride		0.000000	4.100000	772.992366	0.000000	0.00%	0.00%	Application	1	None	None	HH DWS	NA
Nitrate-Nitrite (as N)	14797558	0.000000	0.200000	3,864.961832	0.000000	0.00%	0.00%	Application	1	None	None	HH DWS	NA
Total Alpha		0.000000	0.000000	0.000000	15.000000	0.00%	0.00%	No Data	0	None	None	HH DWS	Acute
Total Beta		0.000000	0.000000	0.000000	50.000000	0.00%	0.00%	No Data	0	None	None	HH DWS	Acute
Total Radium		0.000000	0.000000	0.000000	5.000000	0.00%	0.00%	No Data	0	None	None	HH DWS	Acute
Sulfate (as SO4)		0.000000	140.000000	96,624.045802	0.000000	0.00%	0.00%	Application	1	None	None	HH DWS	NA
Surfactants		0.000000	0.100000	193.248092	0.000000	0.00%	0.00%	Application	1	None	None	HH DWS	NA
Total Recoverable Barium	7440393	0.000000	0.027000	386.496183	0.000000	0.00%	0.00%	Application	1	None	None	HH DWS	NA
Total Recoverable Iron	7439896	0.000000	0.210000	1.000000	4.000000	0.00%	5.25%	Application	1	None	None	Chronic	Acute
Total Recoverable Antimony	7440360	0.000000	0.004000	0.672537	0.000000	0.00%	0.00%	Application	4	None	None	HH Fish	NA
Total Recoverable Arsenic	7440382	0.000000	0.003000	0.150000	0.340000	0.00%	0.88%	Application	4	None	None	Chronic	Acute
Total Recoverable Beryllium	7440417	0.000000	0.004000	1.545985	0.000000	0.00%	0.00%	Application	4	None	None	HH DWS	NA
Total Recoverable Cadmium	7440439	0.000000	0.005000	0.000412	0.003803	0.00%	131.48%	Application	4	None	Monitoring	Chronic	Acute
Total Recoverable Chromium	7440439	0.000002	0.000004	38.649618	0.000000	0.00%	0.00%	DMR	26	Remove	Remove	HH DWS	NA
Total Recoverable Copper	7440508	0.000000	0.003000	0.015166	0.023923	0.00%	12.54%	Application	4	None	None	Chronic	Acute
Total Recoverable Lead	7439921	0.000000	0.003000	0.006562	0.168403	0.00%	1.78%	Application	4	None	None	Chronic	Acute
Total Recoverable Mercury	7439976	0.000000	0.000300	0.000054	0.001700	0.00%	17.65%	Application	4	None	None	HH Fish	Acute
Total Recoverable Nickel	7440020	0.000000	0.020000	0.084395	0.759081	0.00%	2.63%	Application	4	None	None	Chronic	Acute
Total Recoverable Selenium	7782492	0.000000	0.003000	0.005000	0.020000	0.00%	15.00%	Application	4	None	None	Chronic	Acute
Total Recoverable Silver	7440224	0.000000	0.002000	0.000000	0.010065	0.00%	19.87%	Application	4	None	None	HH DWS	Acute
Total Recoverable Thallium	7440280	0.000000	0.002000	0.006620	0.000000	0.00%	0.00%	Application	4	None	None	HH Fish	NA
Total Recoverable Zinc	7440666	0.013000	0.040000	0.193995	0.193995	6.70%	20.62%	Application	111	None	None	Chronic	Acute
Free Cyanide	57125	0.000000	0.004000	0.005200	0.022000	0.00%	18.18%	Application	4	None	None	Chronic	Acute
2,3,7,8 Tetrachlorodibenzo P Dioxin	1746016	0.000000	0.000000	0.000000	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acrolein	107028	0.000000	0.050000	0.304744	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Acrylonitrile	107131	0.000000	0.050000	0.000263	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Benzene	71432	0.000000	0.001000	0.053593	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Bromoform	75252	0.000000	0.001000	0.147118	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Carbon Tetrachloride	56235	0.000000	0.001000	0.001681	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Chlorobenzene	108907	0.000000	0.002000	22.067634	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Chlorodibromomethane	124481	0.000000	0.000000	0.013661	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chloroform	67663	0.000000	0.001000	0.493895	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Dichlorobromomethane	75274	0.000000	0.000000	0.017864	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Dichloroethane	107062	0.000000	0.001000	0.038881	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
1,1-Dichloroethylene	75354	0.000000	0.001000	0.003363	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
1,2-Dichloropropane	78875	0.000000	0.001000	0.015763	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
1,3-Dichloropropene	542756	0.000000	0.001000	1.786427	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Ethylbenzene	100414	0.000000	0.001000	30.474351	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Methyl Bromide	74839	0.000000	0.000000	1.576260	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Methylene Chloride	75092	0.000000	0.001000	0.619995	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
1,1,2,2-Tetrachloroethane	79345	0.000000	0.001000	0.004203	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Tetrachloroethylene	127184	0.000000	0.001000	0.003468	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Toluene	108883	0.000000	0.001000	210.167939	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
1,2-Trans-Dichloroethylene	156605	0.000000	0.000000	147.117557	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,1,1-Trichloroethane	71556	0.000000	0.001000	77.299237	0.000000	0.00%	0.00%	Application	1	None	None	HH DWS	NA
1,1,2-Trichloroethane	79005	0.000000	0.001000	0.016813	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Trichloroethylene	79016	0.000000	0.001000	0.031525	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
Vinyl Chloride	75014	0.000000	0.002000	0.556945	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
2-Chlorophenol	95578	0.000000	0.010000	0.157626	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
2,4-Dichlorophenol	120832	0.000000	0.010000	0.304744	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
2,4-Dimethylphenol	105679	0.000000	0.010000	0.893214	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
2,4-Dinitrophenol	51285	0.000000	0.010000	5.569450	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Pentachlorophenol	87865	0.000000	0.010000	0.003153	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Phenol	108952	0.000000	0.010000	1,786.427481	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
2,4,6-Trichlorophenol	88062	0.000000	0.010000	0.002522	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Acenaphthene	83329	0.000000	0.010000	1.040331	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Anthracene	120127	0.000000	0.010000	42.033588	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Benzidine	92875	0.000000	0.010000	0.000000	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Benzo(a)anthracene	56553	0.000000	0.010000	0.000019	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Benzo(a)pyrene	50328	0.000000	0.010000	0.000019	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Benzo(k)fluoranthene	205992	0.000000	0.010000	0.000019	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Bis(2-chloroisopropyl)ether	108601	0.000000	0.010000	68.304580	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Bis(2-ethylhexyl)phthalate	117817	0.000000	0.010000	0.002312	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Butylbenzyl phthalate	85687	0.000000	0.010000	1.996595	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
2-Chloronaphthalene	91587	0.000000	0.010000	1.681344	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Chrysene	218019	0.000000	0.010000	0.000019	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Dibenzo(a,h)anthracene	53703	0.000000	0.010000	0.000019	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
1,2-Dichlorobenzene	95501	0.000000	0.000000	17.864275	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,3-Dichlorobenzene	541731	0.000000	0.010000	1.008806	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
1,4-Dichlorobenzene	106467	0.000000	0.000000	2.732183	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
3,3-Dichlorobenzidine	91941	0.000000	0.010000	0.000029	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Diethyl phthalate	84662	0.000000	0.010000	46.236947	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Dimethyl phthalate	131113	0.000000	0.010000	1,155.923664	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Di-n-butyl phthalate	84742	0.000000	0.010000	4.728779	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
2,4-Dinitrotoluene	121142	0.000000	0.010000	0.003573	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
1,2-Diphenylhydrazine	122667	0.000000	0.010000	0.000210	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Fluoranthene	206440	0.000000	0.010000	0.147118	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Fluorene	86737	0.000000	0.010000	5.569450	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Hexachlorobenzene	118741	0.000000	0.010000	0.000000	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Hexachlorobutadiene	87683	0.000000	0.010000	0.018915	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Hexachlorocyclopentadiene	77474	0.000000	0.010000	17.864275	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Hexachloroethane	67721	0.000000	0.010000	0.003468	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Ideno(1,2,3-cd)pyrene	193395	0.000000	0.010000	0.000019	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Isophorone	78591	0.000000	0.010000	1.008806	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Nitrobenzene	98953	0.000000	0.010000	0.725079	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
N-Nitrosodimethylamine	62759	0.000000	0.010000	0.001660	0.000000	0.00%	0.00%	Application	1	None	None	HH DWS	NA
N-Nitrosodi-n-Propylamine	621647	0.000000	0.010000	0.000536	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
N-Nitrosodiphenylamine	86306	0.000000	0.010000	0.006305	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Pyrene	129000	0.000000	0.010000	4.203359	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
1,2,4-Trichlorobenzene	120821	0.000000	0.010000	0.987789	0.000000	0.00%	0.00%	Application	1	None	None	HH Fish	NA
Aldrin	309002	0.000000	0.000000	0.000000	0.003000	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
alpha-BHC	319846	0.000000	0.000000	0.000005	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Beta-BHC	319857	0.000000	0.000000	0.000018	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
gamma-BHC (Lindane)	58899	0.000000	0.000000	0.000066	0.000950	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Chlordane	57749	0.000000	0.000000	0.000001	0.002400	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
4,4'-DDT	50293	0.000000	0.000000	0.000000	0.001100	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
4,4'-DDE	72559	0.000000	0.000000	0.000000	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
4,4'-DDD	72548	0.000000	0.000000	0.000000	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dieldrin	60571	0.000000	0.000000	0.000000	0.000240	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Alpha-Endosulfan	959988	0.000000	0.000000	0.000056	0.000220	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Beta-Endosulfan	33213659	0.000000	0.000000	0.000056	0.000220	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Endosulfan sulfate	1031078	0.000000	0.000000	0.093525	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Endrin	72208	0.000000	0.000000	0.000036	0.000086	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Endrin aldehyde	7421934	0.000000	0.000000	0.000315	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Heptachlor	76448	0.000000	0.000000	0.000000	0.000520	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Heptachlor epoxide	1024573	0.000000	0.000000	0.000000	0.000520	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Polychlorinated Biphenyls (PCBs)		0.000000	0.000000	0.000000	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Toxaphene	8001352	0.000000	0.000000	0.000000	0.000730	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
1,2,4,5-Tetrachlorobenzene	95943	0.000000	0.000000	0.001156	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2-methyl-4,6-dinitrophenol	534521	0.000000	0.000000	0.294235	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-D	94757	0.000000	0.000000	168.390611	0.000000	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,5-TP (Silvex)	93721	0.000000	0.000000	3.864962	0.000000	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,5-trichlorophenol	95954	0.000000	0.000000	3.783023	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Asbestos	1332214	0.000000	0.000000	16,839,061.068702	0.000000	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Benzo(b)fluoranthene	205992	0.000000	0.000000	0.000019	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(2-chloroethyl)ether	111444	0.000000	0.000000	0.000557	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(chloromethyl)ether	542881	0.000000	0.000000	0.000000	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chloropyrifos	2921882	0.000000	0.000000	0.000041	0.000083	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Chromium (III)	16065831	0.000000	0.000000	0.137306	2.872717	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Chromium (VI)	18540299	0.000000	0.000000	0.011000	0.016000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Demeton	8065483	0.000000	0.000000	0.000100	0.000000	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Dinitrophenols	25550587	0.000000	0.000000	5.569450	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Guthion	86500	0.000000	0.000000	0.000010	0.000000	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Hexachlorocyclo-hexane-Technical	319868	0.000000	0.000000	0.000044	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hydrogen Sulfide, Undissociated	7783064	0.000000	0.000000	0.002000	0.000000	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Malathion	121755	0.000000	0.000000	0.000100	0.000000	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Methoxychlor	72435	0.000000	0.000000	0.000030	0.000000	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Mirex	2385855	0.000000	0.000000	0.000001	0.000000	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Nitrosamines, Other		0.000000	0.000000	0.000309	0.000000	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
N-Nitrosodibutylamine	924163	0.000000	0.000000	0.000231	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
N-Nitrosodiethylamine	55185	0.000000	0.000000	0.001303	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
N-Nitrosopyrrolidine	930552	0.000000	0.000000	0.035729	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Parathion	56382	0.000000	0.000000	0.000013	0.000065	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Pentachlorobenzene	608935	0.000000	0.000000	0.001576	0.000000	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Phthalate esters		0.000000	0.000000	0.003000	0.000000	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Total Dissolved Solids		0.000000	0.000000	289,872.137405	0.000000	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Tritium		0.000000	0.000000	0.000000	20,000.000000	0.00%	0.00%	No Data	0	None	None	HH DWS	Acute
Total Strontium-90		0.000000	0.000000	0.000000	8.000000	0.00%	0.00%	No Data	0	None	None	HH DWS	Acute
Uranium		0.000000	0.000000	0.000000	0.030000	0.00%	0.00%	No Data	0	None	None	HH DWS	Acute
Total Ammonia		3.010000	4.410000	3.360911	19.890204	89.56%	22.17%	DMR	72	Monitoring	Remove	Chronic	Acute

Hardness
Metal limitations are developed using the mixed hardness of the effluent and receiving waters

Chronic
176.6

Acute
176.6

Toxicity

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

<u>Parameter</u>	<u>CAS Number</u>	<u>Reported Discharge (mg/l)</u>		<u>Calculated Effluent Limitations (mg/l)</u>		<u>Reasonable Potential</u>		<u>Data Source</u>	<u>No. of Samples</u>	<u>Effluent Requirement</u>		<u>Justification</u>	
		<u>Average</u>	<u>Maximum</u>	<u>Average</u>	<u>Maximum</u>	<u>Average</u>	<u>Maximum</u>			<u>Average</u>	<u>Maximum</u>	<u>Average</u>	<u>Maximum</u>

<u>Type of Test</u>	<u>Maximum</u>	<u>Units</u>	<u>Justification</u>	<u>Percent Effluent</u>
Chronic	1.00	TUc	Chronic	100.00%

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KPDES



KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT

PERMIT NO.: KY0072630

AUTHORIZATION TO DISCHARGE UNDER THE KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

Pursuant to Authority in KRS 224,

Logan Aluminum Inc.
P.O. Box 3000
Russellville, Kentucky 42276

is authorized to discharge from a facility located at

Logan Aluminum Inc.
Highway 431 North
Russellville, Logan County, Kentucky

to receiving waters named

Outfall 004 discharges to Austin Creek at N 36° 57' 00", W 86° 55' 45".

Outfall 005 discharges to Austin Creek at N 36° 56' 55", W 86° 55' 43".

Outfall 006 is an internal discharge to Outfall 004.

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in PARTS I, II, III, IV, and V. The permit consists of this cover sheet, and PART I 5 pages, PART II 1 page, PART III 2 pages, PART IV 3, and PART V 3 pages.

This permit shall become effective on

This permit and the authorization to discharge shall expire at midnight,

Date Signed

Sandra L. Gruzesky, Director
Division of Water

A1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from Outfall serial number: 004 - Combined filter backwash, cooling water, process water, storm water runoff, landfill leachate and storm water runoff (pumped from the collection pond - internal Outfall 005), sanitary wastewater (internal Outfall 006), and occasional runoff from the drying impoundment area and sludge dewatering.

Such discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTICS</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	(lbs/day) Monthly Avg.	Daily Max.	Other Units (Specify) Monthly Avg.	Daily Max.	Measurement Frequency	Sample Type
Flow (MGD)	N/A	N/A	Report	Report	Continuous	Recorder
Total Recoverable Chromium	1.29	3.15	N/A	N/A	1/Quarter	Grab
Total Cyanide	0.70	1.72	N/A	N/A	1/Quarter	Grab
Total Recoverable Zinc	3.58	8.70	N/A	N/A	2/Week	Grab
Total Recoverable Aluminum	21.39	48.69	N/A	N/A	2/Week	Grab
Oil & Grease	84.98	84.98	N/A	N/A	2/Week	Grab
Total Suspended Solids	381.0	842.6	N/A	N/A	2/Week	Grab
Hardness (as mg/l CaCO3)	N/A	N/A	Report	Report	2/Week	Grab
Total Recoverable Metals (mg/l)	N/A	N/A	Report	Report	1/Quarter	Grab
Ammonia (as N) (mg/l)	N/A	N/A	Report	Report	2/Week	Grab
Phosphorous (as P) (mg/l)	N/A	N/A	Report	Report	2/Week	Grab
Chronic Toxicity (TUc)	N/A	N/A	N/A	1.0	1/Quarter	3 Grabs

The pH of the effluent shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/Day by grab sample.

There shall be no discharge of floating solids or visible foam or sheen in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: nearest accessible point prior to discharge to or mixing with the receiving waters or wastestreams from other outfalls.

A1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - continued

The term Total Recoverable Metals means those metals listed on Form C, Section V, Part C - Metals, Cyanide, and Total Phenols: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc. Total Recoverable Metals shall be monitored once per quarter by grab sample. The results of the analyses shall be total and reported as a single concentration on the DMR. The laboratory bench sheets showing the results for each metal shall be attached to the DMR.

Chronic Toxicity shall be monitored once per quarter by a minimum of three (3) grab samples collected over one (1) week.

The abbreviation N/A means Not Applicable.

A2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from Outfall serial number: 005 - Storm water runoff and Leachate from the on-site landfill. This outfall is being maintained for emergency and maintenance purposes only. Under normal operating conditions, these wastewaters are collected in the pond and pumped to Outfall 004.

Such discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTICS</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	(lbs/day)		Other Units (Specify)		<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Monthly Avg.</u>	<u>Daily Max.</u>	<u>Monthly Avg.</u>	<u>Daily Max.</u>		
Flow (MGD)	N/A	N/A	Report	Report	1/Discharge	Instantaneous
Precipitation (inches)	N/A	N/A	Report	Report	1/Discharge	Grab
Oil & Grease (mg/l)	N/A	N/A	10	15	1/Discharge	Grab
Total Suspended Solids (mg/l)	N/A	N/A	30	50	1/Discharge	Grab
Hardness (as mg/l CaCO ₃)	N/A	N/A	Report	Report	1/Discharge	Grab
Total Recoverable Metals (mg/l)	N/A	N/A	Report	Report	1/Discharge	Grab
Priority Pollutants (mg/l)	N/A	N/A	Removing from Permit			

The pH of the effluent shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/Discharge by grab sample.

There shall be no discharge of floating solids or visible foam or sheen in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: nearest accessible point prior to discharge to or mixing with the receiving waters or wastestreams from other outfalls.

The abbreviation N/A means Not Applicable.

The term Total Recoverable Metals means those metals listed on Form C, Section V, Part C - Metals, Cyanide, and Total Phenols: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc. Total Recoverable Metals shall be monitored once per discharge, but no more frequently than once per quarter, by grab sample. The results of the analyses shall be total and reported as a single concentration on the DMR. The laboratory bench sheets showing the results for each metal shall be attached to the DMR.

Limits do not apply unless effluent from 005 is being discharged to Austin Creek directly.

A2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from Outfall serial number: 006 - Sanitary waste is treated in a package plant and aerated surface lagoon prior to discharge to the wetlands system (Outfall 004).

Such discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTICS</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	(lbs/day) Monthly Avg.	Daily Max.	Other Units (Specify) Monthly Avg.	Daily Max.	Measurement Frequency	Sample Type
Flow (MGD)	N/A	N/A	Report	Report	1/Month	Instantaneous
BOD ₅ (mg/l)	N/A	N/A	30	45	1/Month	Grab
Total Suspended Solids (mg/l)	N/A	N/A	30	45	1/Month	Grab
<i>Escherichia Coli</i> (N/100 ml)	N/A	N/A	130	240	1/Month	Grab
Ammonia Nitrogen (as mg/l N)	N/A	N/A	20	30	1/Month	Grab
Dissolved Oxygen (mg/l) (minimum)	N/A	N/A	Not less than	2.0	1/Month	Grab
Total Residual Chlorine (mg/l)	N/A	N/A	0.011	0.019	1/Month	Grab

The pH of the effluent shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/Month by Grab sample.

There shall be no discharge of floating solids or visible foam or sheen in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: nearest accessible point prior to discharge to or mixing with the receiving waters or wastestreams from other outfalls.

The abbreviation N/A means Not Applicable.

The abbreviation BOD₅ means Biochemical Oxygen Demand (5-day).

The effluent limitations for BOD₅ and Total Suspended Solids are Monthly Averages and Weekly Averages.

The effluent limitations for *Escherichia Coli* are 30 day and 7 day Geometric Means.

B. Schedule of Compliance

The permittee shall achieve compliance with all requirements on the effective date of this permit or as specified by the permit.

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STANDARD CONDITIONS FOR KPDES PERMIT

The permittee is also advised that all KPDES permit conditions in KPDES Regulation 401 KAR 5:065, Section 1 will apply to all discharges authorized by this permit.

This permit has been issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal, and local agencies.

It is the responsibility of the permittee to demonstrate compliance with permit parameter limitations by utilization of sufficiently sensitive analytical methods.

PART III

OTHER REQUIREMENTS

A. Reporting of Monitoring Results

Monitoring results obtained during each monitoring period must be reported on a preprinted Discharge Monitoring Report (DMR) Form that will be mailed to you. The completed DMR for each monitoring period must be sent to the Division of Water at the address listed below (with a copy to the appropriate Regional Office) postmarked no later than the 28th day of the month following the monitoring period for which monitoring results were obtained.

Division of Water
Bowling Green Regional Office
1508 Western Avenue
Bowling Green, Kentucky 42104
ATTN: Supervisor

Energy & Environment Cabinet
Dept. for Environmental Protection
Division of Water/SWP Branch
200 Fair Oaks Lane
Frankfort, Kentucky 40601

B. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under 401 KAR 5:050 through 5:086, if the effluent standard or limitation so issued or approved:

1. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
2. Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of KRS Chapter 224 when applicable.

C. Cooling Water Additives, FIFRA, and Mollusk Control

The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in cooling water which ultimately may be released to the waters of the Commonwealth is prohibited, except Herbicides, unless specifically identified and authorized by the KPDES permit. In the event the permittee needs to use a biocide or chemical not previously reported for mollusk control or other purpose, the permittee shall submit sufficient information, a minimum of thirty (30) days prior to the commencement of use of said biocides or chemicals, to the Division of Water for review and establishment of appropriate control parameters. Such information requirements shall include:

1. Name and general composition of biocide or chemical,
2. Any and all aquatic organism toxicity data,
3. Quantities to be used,
4. Frequencies of use,
5. Proposed discharge concentrations, and
6. EPA registration number, if applicable.

D. Outfall Signage

The permittee shall post a permanent marker at all discharge locations and/or monitoring points. The marker shall be at least 2 feet by 2 feet in size and a minimum of 3 feet above ground level with the Permittee Name and KPDES permit and outfall numbers in 2 inch letters. For internal monitoring points the marker shall be of sufficient size to include the outfall number in 2 inch letters and shall be posted as near as possible to the actual sampling location.

E Sanitary Wastewater

There shall be no discharge of the effluent from the sanitary wastewater treatment plant. All effluent is to be land applied through the existing spray fields. In the event that sanitary wastewater must be temporarily routed to the wetlands (due to maintenance of the package plant or aerated lagoon) the permittee would be required to notify the Division. During these periods secondary treatment standards must be met before sending the sanitary wastewater to the wetlands (outfall 004).

PART IV

BEST MANAGEMENT PRACTICES

SECTION A. GENERAL CONDITIONS

1. Applicability

These conditions apply to all permittees who use, manufacture, store, handle, or discharge any pollutant listed as: (1) toxic under Section 307(a)(1) of the Clean Water Act; (2) oil, as defined in Section 311(a)(1) of the Act; (3) any pollutant listed as hazardous under Section 311 of the Act; or (4) is defined as a pollutant pursuant to KRS 224.01-010(35) and who have ancillary manufacturing operations which could result in (1) the release of a hazardous substance, pollutant, or contaminant, or (2) an environmental emergency, as defined in KRS 224.01-400, as amended, or any regulation promulgated pursuant thereto (hereinafter, the "BMP pollutants"). These operations include material storage areas; plant site runoff; in-plant transfer, process and material handling areas; loading and unloading operations, and sludge and waste disposal areas.

2. BMP Plan

The permittee shall develop and implement a Best Management Practices (BMP) plan consistent with 401 KAR 5:065, Section 2(10) pursuant to KRS 224.70-110, which prevents or minimizes the potential for the release of "BMP pollutants" from ancillary activities through plant site runoff; spillage or leaks, sludge or waste disposal; or drainage from raw material storage. A Best Management Practices (BMP) plan will be prepared by the permittee unless the permittee can demonstrate through the submission of a BMP outline that the elements and intent of the BMP have been fulfilled through the use of existing plans such as the Spill Prevention Control and Countermeasure (SPCC) plans, contingency plans, and other applicable documents.

3. Implementation

If this is the first time for the BMP requirement, then the plan shall be developed and submitted to the Division of Water within 90 days of the effective date of the permit. Implementation shall be within 180 days of that submission. For permit renewals the plan in effect at the time of permit reissuance shall remain in effect. Modifications to the plan as a result of ineffectiveness or plan changes to the facility shall be submitted to the Division of Water and implemented as soon as possible.

4. General Requirements

The BMP plan shall:

- a. Be documented in narrative form, and shall include any necessary plot plans, drawings, or maps.
- b. Establish specific objectives for the control of toxic and hazardous pollutants.
 - (1) Each facility component or system shall be examined for its potential for causing a release of "BMP pollutants" due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc.

(2) Where experience indicates a reasonable potential for equipment failure (e.g., a tank overflow or leakage), natural condition (e.g., precipitation), or other circumstances which could result in a release of "BMP pollutants," the plan should include a prediction of the direction, rate of flow, and total quantity of the pollutants which could be released from the facility as result of each condition or circumstance.

- c. Establish specific Best Management Practices to meet the objectives identified under paragraph b of this section, addressing each component or system capable of causing a release of "BMP pollutants."
- d. Include any special conditions established in part b of this section.
- e. Be reviewed by plant engineering staff and the plant manager.

5. Specific Requirements

The plan shall be consistent with the general guidance contained in the publication entitled "NPDES Best Management Practices Guidance Document," and shall include the following baseline BMPs as a minimum.

- a. BMP Committee
- b. Reporting of BMP Incidents
- c. Risk Identification and Assessment
- d. Employee Training
- e. Inspections and Records
- f. Preventive Maintenance
- g. Good Housekeeping
- h. Materials Compatibility
- i. Security
- j. Materials Inventory

6. SPCC Plans

The BMP plan may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the Act and 40 CFR Part 151, and may incorporate any part of such plans into the BMP plan by reference.

7. Hazardous Waste Management

The permittee shall assure the proper management of solid and hazardous waste in accordance with the regulations promulgated under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1978 (RCRA) (40 U.S.C. 6901 et seq.) Management practices required under RCRA regulations shall be referenced in the BMP plan.

8. Documentation

The permittee shall maintain a description of the BMP plan at the facility and shall make the plan available upon request to NREPC personnel. Initial copies and modifications thereof shall be sent to the following addresses when required by Section 3:

Division of Water
Bowling Green Regional Office
1508 Western Avenue
Madisonville, Kentucky 42104
ATTN: Supervisor

Energy & Environment Cabinet
Dept. for Environmental Protection
Division of Water/SWP Branch
200 Fair Oaks Lane
Frankfort, Kentucky 40601

9. BMP Plan Modification

The permittee shall amend the BMP plan whenever there is a change in the facility or change in the operation of the facility which materially increases the potential for the ancillary activities to result in the release of "BMP pollutants."

10. Modification for Ineffectiveness

If the BMP plan proves to be ineffective in achieving the general objective of preventing the release of "BMP pollutants," then the specific objectives and requirements under paragraphs b and c of Section 4, the permit, and/or the BMP plan shall be subject to modification to incorporate revised BMP requirements. If at any time following the issuance of this permit the BMP plan is found to be inadequate pursuant to a state or federal site inspection or plan review, the plan shall be modified to incorporate such changes necessary to resolve the concerns.

SECTION B. SPECIFIC CONDITIONS

Periodically Discharged Wastewaters Not Specifically Covered By Effluent Conditions

The permittee shall include in this BMP plan procedures and controls necessary for the handling of periodically discharged wastewaters such as intake screen backwash, meter calibration, fire protection, hydrostatic testing water, water associated with demolition projects, etc.

PART V

BIOMONITORING - CHRONIC CONCERNS

In accordance with PART I of this permit, the permittee shall initiate, within 30 days of the effective date of this permit, or continue the series of tests described below to evaluate wastewater toxicity of the discharge from Outfall 004.

TEST REQUIREMENTS

The permittee shall perform one short-term static-renewal fathead minnow (Pimephales promelas) growth test and one short-term static-renewal water flea (Ceriodaphnia dubia) life-cycle test. Tests shall be performed on a series of grab samples collected as described below. In addition to use of a control, effluent concentrations for the tests must include the permitted limit, (i.e., 100% effluent) and at least four additional effluent concentrations. For a permit limit of 100% effluent, test concentrations shall be 20%, 40%, 60%, 80% and 100%. If the permit limit is less than 100% effluent and greater than or equal to 75% effluent, the test concentrations shall include the permitted limit, two concentrations below the limit that are based on a 0.5 dilution factor, and two concentrations above the limit (to include 100% and mid-point between the permit limit and 100%). If the permit limit is less than 75% effluent, test concentrations shall include the permit limit concentration, two concentrations below the limit based on a 0.5 dilution factor, and two concentrations above the limit based on a 0.5 dilution factor if possible, otherwise to include 100% and mid-point between the permit limit and 100%. Selection of different effluent concentrations must be approved by the Division prior to testing. Testing of the effluent shall be initiated within 36 hours of completing each grab sample. Controls shall be tested concurrently with effluent testing using synthetic water. The analysis will be deemed reasonable and good only if the minimum control requirements are met, (i.e. For the Ceriodaphnia test: at least 80% survival of all control organisms and an average of 15 or more young per surviving female in the control solutions; and 60% of surviving control females must produce three broods. For the fathead minnow test: at least 80% survival in controls and the average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg. Any test that does not meet the control acceptability criteria shall be repeated as soon as practicable within the monitoring period (i.e. monthly or quarterly). Noncompliance with the toxicity limit will be demonstrated if the IC_{25} (inhibition concentration) for reproduction or growth is less than 100% effluent

Tests shall be conducted on both species at the frequency specified in PART I of this permit.

A minimum of three grab samples shall be collected at a frequency of one every other day. For example, the first sample would be used for test initiation on day 1 and for test solution renewal on day 2. The second sample would be used for test solution renewal on days 3 and 4. The third sample would be used for test solution renewal on days 5, 6, and 7. Each 24 hour composite shall be collected using a refrigerated automatic sampler. The lapsed time from collection of the sample and its first use for test initiation or for test solution renewal shall not exceed 36 hours.

PART V - BIOMONITORING - CHRONIC CONCERNS

TEST REQUIREMENTS

Grab samples shall be refrigerated and maintained at not greater than 6°C during collection, storage, transport and until used in the test by the laboratory.

If after at least six consecutive toxicity tests, it can be determined that Ceriodaphnia dubia or the Fathead minnow is more sensitive and all tests have passed, a request for testing with only the most sensitive species can be submitted to the Division. Upon approval, that most sensitive species may be considered as representative and all subsequent compliance tests can be conducted using only that species unless directed at any time by the Division to change or revert to both.

REPORTING REQUIREMENTS

Results of all toxicity tests conducted with any species shall be reported according to the most recent format provided by the Division of Water. Notification of failed test shall be made to the Division's Water Quality Branch within five days of test completion. Test reports shall be submitted to the Division's Water Quality Branch within thirty days of completion.

Chronic Toxicity

If noncompliance with the toxicity limit occurs in an initial test, (i.e., the IC₂₅ for reproduction of water fleas or growth of minnows is less than (percent)% effluent), the permittee must repeat the test using a new set of three grab samples. Sampling must be initiated within 15 days of completing the failed test. The second round of testing shall include both species unless approved for only the most sensitive species by the Division. Results of the second round of testing will be used to evaluate the possible need for a Toxicity Reduction Evaluation (TRE).

If the second round of testing also demonstrates noncompliance with the toxicity limit, the permittee will be required to perform accelerated testing as specified in the following paragraphs.

Complete four additional rounds of testing to evaluate the frequency and degree of toxicity within 60 days of completing the second round of failed testing. Results of the initial and second rounds of testing specified above, plus the four additional rounds of testing will be used in deciding if a TRE shall be required.

If results from any two of the six rounds of testing show a significant noncompliance with the chronic limit (i.e., ≥ 1.2 times the TU_c), or results from any four of the six tests show chronic toxicity (as defined in 1.A), a TRE will be required.

The permittee shall provide written notification to the Division of Water within five (5) days of completing accelerated testing stating that: (1) toxicity persisted and that a TRE will be initiated; or (2) that toxicity did not persist and the normal testing will resume.

Should toxicity prove not to be persistent during the accelerated testing period, but reoccur within 12 months of the initial failure at a level ≥ 1.2 times the TU_c, then a TRE shall be required.

PART V - BIOMONITORING - CHRONIC CONCERNS

TOXICITY REDUCTION EVALUATION (TRE)

Having determined that a TRE is required, the permittee shall initiate &/or continue at least monthly testing with both species until such time as a specific TRE plan is approved by the Division. A TRE plan shall be developed by the permittee and submitted to the Division within thirty days of determining a TRE is required. The plan shall be developed in accordance with the most recent EPA and Division guidance. Questions regarding this process may be submitted to the Division's Water Quality Branch.

The TRE plan shall include Toxic Identification Evaluation (TIE) procedures, treatability studies, and evaluations of: chemical usage including changes in types, handling and suppliers; operational and process procedures; housekeeping and maintenance activities; and raw materials. The TRE plan will establish an implementation schedule to begin immediately upon approval by the Division, to have duration of at least six months, and not to exceed 24 months. The implementation schedule shall include quarterly progress reports being submitted to the Division's Water Quality Branch, due the last day of the month following each calendar quarter.

Upon completion of the TRE, the permittee shall submit a final report detailing the findings of the TRE and actions taken or to be taken to prevent the reoccurrence of toxicity. This final report shall include: the toxicant(s), if any are identified; treatment options; operational changes; and the proposed resolutions including an implementation schedule not to exceed 180 days.

Should the permittee determine the toxicant(s) and/or a workable treatment prior to the planned conclusion of the TRE, the permittee will notify the Division's Water Quality Branch within five days of making that determination and take appropriate actions to implement the solution within 180 days of that notification.

TEST METHODS

All test organisms, procedures and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (Fourth Edition), EPA-821-R-02-013, the most recent edition of this publication, or as approved in advance by the Division of Water.

Toxicity testing for compliance to KPDES discharge limits shall be performed by a laboratory approved by the Division of Water to conduct the required toxicity tests. Within each toxicity report to the Division of Water, the permittee must demonstrate successful performance of reference toxicant testing by the laboratory that conducts their effluent toxicity tests. Within 30 days prior to initiating an effluent toxicity test, a reference toxicant test must be completed for the method used; alternatively, the reference toxicant test may be run concurrent with the effluent toxicity test. In addition, for each test method, at least 5 acceptable reference toxicant tests must be completed by the laboratory prior to performing the effluent toxicity test. A control chart including the most recent reference toxicant test endpoints for the effluent test method (minimum of 5, up to 20 if available) shall be part of the report.